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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,474	08/23/2001	Masanobu Iwasaki	50090-334	8431

7590 04/18/2002

McDermott, Will & Emery  
600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER

SHAKERI, HADI

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 04/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/934,474

Applicant(s)

IWASAKI ET AL.

Examiner

Hadi Shakeri

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the controller for each supply unit must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

### ***Claim Objections***

2. Claim 5 is objected to because of the following informalities: "controlling rotating speed" line 3 should be changed to "controlling a rotating speed". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 5, 10, 12, 13 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claim 3, the phrase "or a gas supply" in line 7, renders the claim indefinite for failing to particularly point out and distinctly claim the subject matter, for the use of alternate language, since the different embodiments of the system require different structures. It results in undue multiplicity. Same rejection applies to claims 4 and 5.

6. Claim 5 recites the limitation "the flow rate of liquids" in line 2. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 10 recites the limitation "the mist of abrasive slurry" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 10 recites a first and second supply units comprising additive, rendering the claim and its dependents (claims 12, 13 and 16) indefinite.

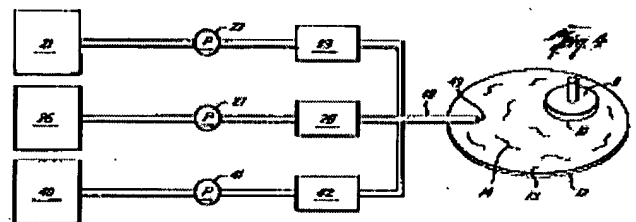
***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy et al., US Patent No. 5,478,438 in view of Chamberlin et al., US Patent No. 5,997,392.

Murphy et al. discloses all the limitations of the above claims, a polishing table, a first supply unit (21-25) for supplying abrasive slurry, a second supply unit (26-30) for supplying additive, and a third supply unit (40-43) for supplying d.i. water, a mixing unit ("T" connection), col. 5, lines 21-24, for mixing the liquids, and supplying the mixed liquid to the pad, except for disclosing supplying the liquids in a mist.



Chamberlin et al. teaches a slurry injection technique for CMP for supplying the slurry in the form of mist, col. 5, lines 45-51. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Murphy et al. with spraying slurry on to the pad as taught by Chamberlin et al. to reduce the cost by using smaller amount of slurry while still maintain the polishing rate and uniformity, Chamberlin col. 3, lines 1-5.

Regarding claims 6 and 7 prior art discloses all the limitations of the above claims, except for the use of aqueous solution of organic acid or hydrogen peroxide, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use hydrogen peroxide, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 13, prior art meets all the limitations except for the step of supplying water to the polishing pad, it would have been obvious to one having ordinary skill in the art at the time the invention was made to supply water when the slurry is not being supplied, based on the desired parameters which would not be within the general skill of a worker in the art.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Arguments with regarding claims 6, 7 and 13 are not persuasive. The use of a specific additive is not disclosed by the primary reference (Murphy et al.), it specifically states in col. 3, lines 65-67 and col. 4, lines 1 and 2, that the use of additives to enhance the polishing process or to obtain desired planarization of the surface is also known in the prior art, also using a specific material or element for its desired property is within the skill of person skilled in the art, therefore the use of organic acid and/or hydrogen peroxide, both well known in the art is considered obvious. There would also be operations and occasions for which a slurry solution would not be required and only

Art Unit: 3723

water would be supplied to the surface of the pad, e.g., purging operations, under these "desired parameters" water supplied to the pad would on its route, be supplied to the mixing unit.

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hadi Shakeri at (703) 308-6279, FAX (703) 746-3279 for unofficial documents. The examiner can normally be reached on Monday-Thursday, 7:30 AM to 6:00 PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1148.



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HS



April 10, 2002